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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/637,843

08/08/2003

Won Kyu Choi

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4354

8791

7590

10/19/2004

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER

VU, JIMMY T

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/637,843	Applicant(s) CHOI ET AL.	
	Examiner Jimmy T Vu	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*-See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Killen (U.S. Patent Application Publication number US 2004/0104847 A1).

Regarding claim 1, Killen discloses a microstrip patch antenna (200), comprising:

lower patch antenna layer having a dielectric layer (212) and ground plane (208), for radiating energy by exciting current by a feeding means (217) patch on a side of the dielectric layer (Fig. 2, page 3, col. 2, lines 55-67);

an upper patch antenna layer having a dielectric film (209), for radiating energy by exciting current by the lower radiating patch electromagnetically connected to an upper radiating patch on a side of the dielectric film;

a foam layer (211) for distancing the upper patch antenna layer from the lower patch antenna layer by arranging the foam layer between the lower patch antenna layer and the upper patch antenna layer; and

a dielectric superstrate located with a predetermined distance from the upper patch antenna layer (Fig. 2, page 3, col. 2, lines 55-67, page 4, col. 1, lines 1-67).

Regarding claim 2, Killen discloses the apparatus wherein the upper radiating patch is stacked upon the lower radiating patch (Fig. 2).

Regarding claim 3, Killen discloses the apparatus wherein the thickness and the dielectric constant of the dielectric superstrate determine the bandwidth and gain of the microstrip patch antenna (pages 3 and 4).

Regarding claim 4, Killen discloses the apparatus wherein as the thickness of dielectric superstrate becomes thicker and the dielectric constant the dielectric superstrate is increased, the gain of the antenna tends to be higher and the bandwidth of the antenna tends to be narrower (pages 3 and 4).

Regarding claim 5, Killen discloses the apparatus wherein the predetermined distance between the upper patch antenna layer and the dielectric superstrate largely affects the resonant characteristics of the microstrip patch antenna (pages 3 and 4).

Allowable Subject Matter

3. Claim 6 is allowed.

None of the prior art teaches the microstrip array antenna wherein the microstrip array antenna designed using a corporate feeding method and an element spacing of the microstrip patch antennas is more than $1\lambda_0$ at 12GHz to minimize the coupling between the microstrip patch antennas, wherein although the element spacing in the

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array is wider than the wavelength at 12GHz in free space, the grating lobes can be reduced by the dielectric superstrate.

Conclusion

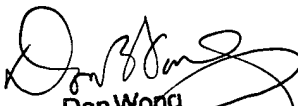
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy T Vu whose telephone number is (571) 272-1832. The examiner can normally be reached on M - F: 9 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2800.

Jimmy Vu

October 13, 2004


Don Wong
Supervisory Patent Examiner
Technology Center 2800